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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/381,899	12/16/1999	JAN ANDERSSON	097037014006	4564

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EXAMINER

BIENEMAN, CHARLES A

ART UNIT	PAPER NUMBER
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2176

DATE MAILED: 08/28/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/381,899

Applicant(s)

ANDERSSON, JAN

Examiner

Charles A. Bieneman

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 December 1999.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

1. This action is responsive to the following communication: national stage application filed on 12/2/1999 and the Preliminary Amendment filed on 9/1/2000.

The Amendment requests in the Preliminary Amendment filed September 1, 2000 have not been entered because they were previously entered in the substitute specification.

2. Claims 1-34 are pending. Claims 1 and 18 are independent claims.

Drawings

3. This application has been filed with informal drawings which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.

Information Disclosure Statement

4. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

Specification

5. This application does not contain an abstract of the disclosure as required by 37 CFR 1.72(b). An abstract on a separate sheet is required.
6. A substitute specification, including the claims, in proper idiomatic English and in compliance with 37 CFR 1.52(a) and (b) is required. The substitute specification filed must be

accompanied by a statement that it contains no new matter. Examples of improper English are given below in Paragraph 10 of this Detailed Action.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

8. **Claims 1-34** are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Regarding **claims 1-34**, applicant discloses the “interpretation” of an “RCG-value (RCG-ReCoGnition)” (page 6, lines 25-26). Applicant’s sole explanation of what the RCG-value stands for is the statement that it is “a value at a given position that is unique for a certain . . . form.” (Page 6, lines 26-27.) Applicant does not disclose how the RCG-value is created or generated. Applicant makes clear that the RCG-value is integral to each of applicant’s claims 1-34. (See page 6, lines 25-26; page 8, lines 26-29; Figure 2.) Accordingly, applicant’s disclosure would not have enabled one of ordinary skill in the art to practice the invention recited in claims 1-34.

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. **Claims 1-34** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as

the invention. The claims are generally narrative and indefinite, failing to conform with current U.S. practice. They appear to be a literal translation into English from a foreign document and are replete with grammatical and idiomatic errors.

For example, in **claims 1 and 18**, the phrase “the automatic data acquisition” in line 1 should be “automatic data acquisition”; or possibly the word “interpretation” would make more sense. The phrase “means of a means for the same” in line 1 is not comprehensible; moreover, it is thus unclear to what antecedent “said means” refers in line 2. Regarding the phrase “together with storage patterns of the same” in line 3, it is not clear to what antecedent “the same” refers. It is not clear what the phrase “the method is adaptive and includes self-learning” in lines 3-4 means nor how it limits what is being claimed. In claim 1, the meaning of the last recited claim limitation, “continued data acquisition for identifying the information content of the form” is unclear. Claim 18 is similarly unclear in reciting “means for identification and continued data acquisition of the information content of the form.”

Other examples abound and similar difficulties exist with respect to **dependent claims 2-17 and 19-34**, which claims are also rejected for fully incorporating the deficiencies of their base claims.

11. **Claim 1** recites the limitation "generated form maps" in line 10. There is insufficient antecedent basis for this limitation in the claim. Claim 1 earlier (lines 6, 8) refers to “a form map” and “the form map” but not to a plurality of form maps.

12. **Claim 8** recites the limitation "the horizontal key" in line 1. There is insufficient antecedent basis for this limitation in the claim. Neither of the claims from which claim 8 depends, claim 1 and claim 4, provides antecedent basis for “the horizontal key.”

13. **Claim 10** recites the limitations "the object's horizontal position" and "the object area list" in lines 1 and 2. There is insufficient antecedent basis for these limitations in the claim because neither limitation is referred to in claim 1, from which claim 10 depends.

14. **Claim 11** recites the limitations "the object's vertical position" and "the object area list" in lines 1 and 2. There is insufficient antecedent basis for these limitations in the claim because neither limitation is referred to in claim 1, from which claim 11 depends.

15. **Claim 18** recites the limitation "generated form maps" in line 10. There is insufficient antecedent basis for this limitation in the claim. Claim 18 earlier (lines 6, 8) refers to "a form map" and "the form map" but not to a plurality of form maps.

16. **Claim 27** recites the limitations "the object's horizontal position" and "the object area list" in lines 1 and 2. There is insufficient antecedent basis for these limitations in the claim because neither limitation is referred to in claim 18, from which claim 27 depends.

17. **Claim 28** recites the limitations "the object's vertical position" and "the object area list" in lines 1 and 2. There is insufficient antecedent basis for these limitations in the claim because neither limitation is referred to in claim 18, from which claim 28 depends.

18. **Claims 1-17** are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01.

Regarding **independent claim 1**, the omitted steps are: interpreting the RCG-value and using it to confirm or reject the identity of a document. The specification seems to make clear that this step is necessary to identify a document. (See page 6, lines 25-26; page 8, lines 26-29; Figure 2.)

Dependent claims 2-16 are rejected for fully incorporating the deficiencies of their base claim.

19. **Claims 18-33** are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01.

Regarding **independent claim 18**, the omitted elements are: means for interpreting the RCG-value and using it to confirm or reject the identity of a document. The specification seems to make clear that this step is necessary to identify a document. (See page 6, lines 25-26; page 8, lines 26-29; Figure 2.)

Dependent claims 18-33 are rejected for fully incorporating the deficiencies of their base claim.

Claim Rejections - 35 USC § 102

20. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

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21. **Claims 1, 17-18, and 34** are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent Number 5,815,704 to Shimotsuji et al. ("Shimotsuji") issued on September 28, 1998, filed on January 26, 1996.

Regarding **independent claims 1 and 18**, Shimotsuji teaches input means for inputting a form. (Shimotsuji, col. 3, lines 31-32.)

Shimotsuji further teaches generation of a form map for a previously unknown form inasmuch as the line/character data disclosed by Shimotsuji is equivalent to a form map. (Shimotsuji, col. 3, lines 44-45; see also col. 4, lines 5-48.)

Shimotsuji further teaches searching and comparing the form map with stored, registered maps. (Shimotsuji, col. 3, lines 48-50; col. 4, lines 50-54.)

Shimotsuji further teaches storage of generated form maps when they do not coincide with a stored map according to pre-determined limits for agreement. (Shimotsuji, col. 5, line 66 – col. 6, line 2.)

Shimotsuji further teaches indication of agreement according to the limits for agreement when agreement is found. (Shimotsuji, col. 6, lines 50-56.)

Finally, insofar as the last recited limitations of claims 1 and 18 can be understood, Shimotsuji teaches continued data acquisition for identifying the content of the form inasmuch as Shimotsuji discloses a file means for storage and retrieval of document images from which form maps can be extracted. (Shimotsuji, col. 2, lines 12-41.)

Regarding **dependent claims 17 and 34**, insofar as the definition of RCG-value can be understood, Shimotsuji discloses both difference data, used for detecting differences between

documents, and the registration of this difference data and identification information for retrieved documents when registering a new document. (Shimotsuji, col. 1, lines 60-65.)

Claim Rejections - 35 USC § 103

22. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

23. **Claims 1, 4-9, 17-18, 21-26 and 34** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Number 5,293,429 to Pizano et al. issued March 8, 1994 ("Pizano") in view of U.S. Patent Number 5,434,933 to Karnin et al. issued July 18, 1995 ("Karnin").

Regarding **independent claims 1 and 18**, Pizano teaches input means for inputting a form. (Pizano, col. 2, lines 64-66; Fig. 1.)

Pizano further teaches generation of a form map for a previously unknown form inasmuch as Pizano's feature extraction is equivalent to the generation of a form map. (Pizano, col. 2, lines 64-66; Fig. 1)

Pizano further teaches searching and comparing the form map with stored, registered maps. (Pizano, col. 4, lines 58-67.)

Pizano does not explicitly disclose storage of generated form maps when they do not coincide with a stored map according to pre-determined limits for agreement. However, Karnin teaches the storage of image signatures, which are analogous to form maps, as new templates when the image does not match any previously stored template. (Karnin, col. 8, lines 36-38.) In

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view of Karnin's teaching it would have been obvious to modify Pizano to store unmatched form maps.

Pizano further teaches indication of agreement according to the limits for agreement when agreement is found inasmuch as Pizano discloses form identification as output when a match is achieved. (Pizano, col. 2, line 67 – col.3, line 2.)

Finally, insofar as the last recited limitations of claims 1 and 18 can be understood, Pizano teaches continued data acquisition for identifying the content of the form inasmuch as Pizano discloses storage of a form dictionary of template features. (Pizano, col. 2, lines 62-63.)

Regarding **dependent claims 4 and 21**, Pizano discloses “the use of horizontal and vertical lines as features for identifying a form.” (Pizano, col. 3, lines 5-6.)

Regarding **dependent claims 5-6 and 22-23**, Pizano discloses breaking a document into a pre-determined number of horizontal and vertical segments which are equivalent to positions in the horizontal and vertical keys respectively. (Pizano, col. 6, lines 35-51; Fig 5.)

Regarding **dependent claims 7 and 24**, Pizano discloses the marking of segments containing line elements inasmuch as Pizano discloses an approximation method that assigns a binary value (*i.e.*, a tag or mark) to a region (*i.e.*, a segment or line key) depending on whether the region contains a line. (Pizano, col. 6, lines 46-49.)

Regarding **dependent claims 8 and 25**, Pizano discloses the comparison of line key patterns. (Pizano, col. 6, lines 36-40.)

Regarding **dependent claims 9 and 26**, it would have been obvious to one of ordinary skill in the art to modify Pizano to sort regions (*i.e.*, line keys) according to the number of

markings inasmuch as it would have been obvious to extend Pizano's method of assigning one or no tags to a region to a method that assigns a plurality of tags to a region.

Regarding **dependent claims 17 and 34**, insofar as the examiner understands the RCG-value disclosed by applicant, Pizano does not disclose confirming the identity of a form with a unique value such as the RCG-value. However, Karnin discloses a "signature" that is a numeric representation of a form. (Karnin, col. 3, lines 23-32.) It would have been obvious to one of ordinary skill in the art to have modified Pizano to use the signatures disclosed by Karnin to identify forms.

24. **Claims 2-3, 10-14, 19-20, and 27-31** are rejected under 35 U.S.C. 103(a) as being unpatentable over Pizano and Karnin as applied to claims 1 and 18 above, and further in view of U.S. Patent Number 4,933,979 to Suzuki, issued June 12, 1990 ("Suzuki").

Regarding **independent claims 2 and 19**, neither Pizano nor Karnin teach an object area list. Suzuki, however, teaches the storage of information sets for a set of reading areas, which are analogous to object area lists inasmuch as reading areas identify parts of a form and can contain objects such as text or images. (See Suzuki, col. 6, lines 1-3, lines 39-46.) Thus, it would have been obvious to one of ordinary skill in the art to modify the combination of Pizano and Karnin to use an object area list.

Regarding **independent claims 3 and 20**, Suzuki teaches both the recognition of characters (Suzuki, col. 6, line 66 – col. 8 line 5) and the recognition of different gradations of tones (Suzuki, col. 8, lines 15-44). Thus, it would have been obvious to one of ordinary skill in the art to modify the combination of Pizano and Karnin to include text and colors as objects.

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Regarding **dependent claims 10-11 and 27-28**, Pizano does not teach the application of horizontal and vertical keys to objects. However, in view of Suzuki's use of object area lists, noted above, it would have been obvious to one of ordinary skill in the art to extend the application of Pizano's use of horizontal and vertical keys, noted above regarding dependent claims 5-6 and 22-23, from lines to objects.

Regarding **dependent claims 12 and 29**, Pizano does not teach the marking of keys where an object is included in a segment in an equivalent position. However, in view of Suzuki's use of object area lists, noted above, it would have been obvious to one of ordinary skill in the art to extend the application of Pizano's use of horizontal and vertical keys, noted above regarding dependent claims 7 and 24, from lines to objects.

Regarding **dependent claims 13 and 30**, Pizano does not teach the comparison of a generated object key with a stored object key during a search procedure. However, in view of Suzuki's use of object area lists, noted above, it would have been obvious to one of ordinary skill in the art to extend the application of Pizano's use of line keys, noted above regarding dependent claims 8 and 25, to object keys.

Regarding **dependent claims 14 and 31**, Pizano does not teach the sorting of object keys according to the number of markings. However, in view of Suzuki's use of object area lists, noted above, it would have been obvious to one of ordinary skill in the art to extend the obvious modification of Pizano's method to sort line keys, noted above regarding dependent claims 9 and 26, to sort object keys.

25. **Claims 15-16 and 32-33** are rejected under 35 U.S.C. 103(a) as being unpatentable over Pizano and Karnin as applied to claims 1 and 18 above, and further in view of U.S. Patent Number 5,642,288 to Leung et al. ("Leung") issued June 24, 1997, filed November 10, 1994.

Regarding **dependent claims 15 and 32**, neither Pizano nor Karnin disclose searching resulting a pre-defined number of requested probable candidates for the currently searched form. However, Leung discloses returning a predefined number of matches to the user in the context of a document recognition and handling system. (Leung, col. 10, lines 1-18.) It would have been obvious to one of ordinary skill in the art to have modified the combination of Pizano and Karnin to include Leung's step of returning a pre-defined number of requested probable candidates for the currently searched form.

Regarding **dependent claims 16 and 33**, Karnin teaches manual support of the registration process by an operator. (Karnin, col. 8, lines 33-35.)

Conclusion

26. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent Number 5,877,963 to Leung et al., issued March 2, 1999, filed February 26, 1997 discloses generation of a form map for a scanned document and comparing the form map to a plurality of stored form maps.

U.S. Patent Number 5,799,115 to Asano et al., issued August 25, 1998, filed March 11, 1996 discloses an image filing apparatus in which image formats are input and compared to a plurality of registered formats.

U.S. Patent Number 5,438,657 to Nakatani, issued August 1, 1995 discloses the analysis and storage of document line data as learning data and the use of the learning data to create a new document having similar layout to the original document.

U.S. Patent Number 5,101,448 to Kawachiya et al., issued March 31, 1992 discloses a document processor for processing a document image including both a table with a plurality of ruled lines and characters.

U.S. Patent Number 4,933,984 to Nakano et al., issued June 12, 1990 discloses a document analysis system in which documents are identified on the basis of frames and the relationship between frames extracted from a sample document.

U.S. Patent Number 4,523,331 to Asija, issued June 11, 1985 discloses a method and apparatus for transforming an image into a unique binary number.

Chapter 16.1 of *Case-Based Reasoning and Learning* by Janet Kolodner (1993) teaches that "[a] case-based reasoner learns primarily by accumulating new experiences in its memory and indexing them appropriately."


27. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles A. Bieneman whose telephone number is 703-305-8045. The examiner can normally be reached on Monday - Thursday, 7:00 a.m. - 5:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Heather Herndon can be reached on 703-308-5186. The fax phone numbers for the organization where this application or proceeding is assigned are 703-746-7239 for regular communications and 703-746-7238 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4700.

CAB
August 25, 2002


HEATHER R. HERNDON
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100